

SEQUENCE LISTING

<110> Chisso Corporation
FUJIMORI KOGYO Co., Ltd.

<120> Thrombin Derivative and Pharmaceutical Composition Containing the Same

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<150> JP 2004-080950

<151> 2004-03-19

<150> JP 2004-170346

<151> 2004-06-08

<150> JP 2004-217834

<151> 2004-07-26

<150> JP 2004-315631

<151> 2004-10-29

<150> JP 2005-29360

<151> 2005-02-04

<160> 58

<170> PatentIn version 3.1

<210> 1

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<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (1)..(927)

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Ser Gly Glu Ala Asp Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser

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ctg gag gac aaa acc gaa aga gag ctc ctg gaa tcc tac atc gac ggg
Leu Glu Asp Lys Thr Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly

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cgc att gtg gag ggc tcg gat gca gag atc ggc atg tca cct tgg cag 192

48

96

144

Arg Ile Val Glu Gly Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln
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 65 70 75 80
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 Leu Ile Ser Asp Arg Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr
 85 90 95
 ccg ccc tgg gac aag aac ttc acc gag aat gac ctt ctg gtg cgc att 336
 Pro Pro Trp Asp Lys Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile
 100 105 110
 ggc aag cac tcc cgc aca agg tac gag cga aac att gaa aag ata tcc 384
 Gly Lys His Ser Arg Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser
 115 120 125
 atg ttg gaa aag atc tac atc cac ccc agg tac aac tgg cgg gag aac 432
 Met Leu Glu Lys Ile Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn
 130 135 140
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 Leu Asp Arg Asp Ile Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe
 145 150 155 160
 agt gac tac att cac cct gtg tgt ctg ccc gac agg gag acg gca gcc 528
 Ser Asp Tyr Ile His Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala
 165 170 175
 agc ttg ctc cag gct gga tac aag ggg cgg gtg aca ggc tgg ggc aac 576
 Ser Leu Leu Gln Ala Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn
 180 185 190
 ctg aag gag acg tgg aca gcc aac gtt ggt aag ggg cag ccc agt gtc 624
 Leu Lys Glu Thr Trp Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val
 195 200 205
 ctg cag gtg gtg aac ctg ccc att gtg gag cgg ccg gtc tgc aag gac 672
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 210 215 220
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 Ser Thr Arg Ile Arg Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys
 225 230 235 240
 cct gat gaa ggg aaa cga ggg gat gcc tgt gaa ggt gac agt ggg gga 768
 Pro Asp Glu Gly Lys Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly
 245 250 255
 ccc ttt gtc atg aag agc ccc ttt aac aac cgc tgg tat caa atg ggc 816
 Pro Phe Val Met Lys Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly
 260 265 270
 atc gtc tca tgg ggt gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc 864
 Ile Val Ser Trp Gly Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe
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 35 40 45
 Arg Ile Val Glu Gly Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln
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 Val Met Leu Phe Arg Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser
 65 70 75 80
 Leu Ile Ser Asp Arg Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr
 85 90 95
 Pro Pro Trp Asp Lys Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile
 100 105 110
 Gly Lys His Ser Arg Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser
 115 120 125
 Met Leu Glu Lys Ile Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn
 130 135 140
 Leu Asp Arg Asp Ile Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe
 145 150 155 160
 Ser Asp Tyr Ile His Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala
 165 170 175
 Ser Leu Leu Gln Ala Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn
 180 185 190
 Leu Lys Glu Thr Trp Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val
 195 200 205
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 210 215 220
 Ser Thr Arg Ile Arg Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys
 225 230 235 240
 Pro Asp Glu Gly Lys Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly
 245 250 255
 Pro Phe Val Met Lys Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly
 260 265 270
 Ile Val Ser Trp Gly Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe
 275 280 285
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 290 295 300
 Gln Phe Gly Glu
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 50 55 60
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 gcc ctg tgt agc ctt gtg cac acc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

	50	55	60	240
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc				
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr				
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gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc				288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly				
85	90	95		
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg				336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg				
100	105	110		
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc				384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg				
115	120	125		
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Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys				
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg				
145	150	155	160	
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Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile				
165	170	175		
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Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile				
180	185	190		
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac				624
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His				
195	200	205		
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct				672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala				
210	215	220		
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp				
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aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac				768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc				816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
260	265	270		
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa				864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				
275	280	285		
cga ggg gat gcc tgt gaa ggt gac agt ggg gga ccc ttt gtc atg aag				912
Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly Pro Phe Val Met Lys				
290	295	300		
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt				960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly				
305	310	315	320	

gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056
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340	345	350

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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	

Arg Gly Asp Ala Cys Glu Gly Asp Ser Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

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1	5	10	15															
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag		96	
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln			
20	25	30																
caa	gca	cgg	tgc	ctg	ctc	cag	cg	gtc	cg	cg	ca	cc	g	cc	acc	agt	gag	144
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu			
35	40	45																
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tgc	gga	gag	gca	gac		192	
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp			
50	55	60																
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	tcg	ctg	gag	gac	aaa	acc		240		
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr			
65	70	75	80															
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc		288	
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly			
85	90	95																
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cgg		336	
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg			
100	105	110																
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc		384	
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg			
115	120	125																
tgg	gtc	ctc	acc	gcc	cac	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag		432		
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys			
130	135	140																
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc		480	
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aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc				528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile				
165	170	175		
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att				576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile				
180	185	190		
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac				624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His				
195	200	205		
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct				672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala				
210	215	220		
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg				720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp				
225	230	235	240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac				768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc				816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
260	265	270		
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa				864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				
275	280	285		
cga ggg gat gcc tgt gaa gct gac ggt ggg gga ccc ttt gtc atg aag				912
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Pro Phe Val Met Lys				
290	295	300		
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt				960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly				
305	310	315	320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc				1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
325	330	335		
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag				1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
340	345	350		

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<213> Homo sapiens

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Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
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Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85	90	95
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		
100	105	110
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		
115	120	125
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130	135	140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
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Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
165	170	175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile		
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Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
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Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
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Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
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1	5			10				15									
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag		96
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln		
20		25				30											
caa	gca	cg	tcg	ctg	ctc	cag	cg	gg	gtc	cg	cg	ca	cc	ag	tg		144
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu		
35		40				45											
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac		192
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp		
50		55			60												
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	tcg	ctg	gag	gac	aaa	acc		240	
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr		
65		70			75			80									
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc		288
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly		
85		90			95												
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cgg		336
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg		
100		105			110												
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc		384
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg		
115		120			125												
tgg	gtc	ctc	acc	gcc	cc	cac	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag		432
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys		
130		135			140												
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc		480
Asn	Phe	Thr	Glu	Asn	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg			
145		150			155			160									
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc		528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile		
165		170			175												
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Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile		
180		185			190												
gcc	ctg	atg	aag	aag	cct	gtt	ggc	ttc	agt	gac	tac	att	cac			624	
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His		
195		200			205												
cct	gtg	tgt	ctg	ccc	gac	agg	gg	ac	gca	gg	ac	tt	ctc	ca	gt		672
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala		
210		215			220												
gga	tac	aag	ggg	cg	gt	aca	gg	tt	gg	ac	ct	aa	gg	ac	tg		720
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp		
225		230			235			240									
aca	gcc	aac	gtt	gg	tt	aag	ggg	cg	cc	ag	gt	ct	ca	gt	gt	aac	768
Thr	Ala	Asn	Val	Gly	Lys	Gly	Gln	Pro	Ser	Val	Leu	Gln	Val	Val	Asn		

245	250	255	
ctg ccc att gtg gag cg	cg gtc tgc aag gac tcc acc	cg atc cgc	816
Leu Pro Ile Val Glu Arg	Pro Val Cys Lys Asp Ser	Thr Arg Ile Arg	
260	265	270	
atc act gac aac atg ttc	tgt gct ggt tac aag cct	aat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe	Cys Ala Gly Tyr Lys Pro	Asp Glu Gly Lys	
275	280	285	
cga ggg gat gcc tgt gaa	ggt gac gct ggg gga	ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu	Gly Asp Ala Gly Gly	Pro Phe Val Met Lys	
290	295	300	
agc ccc ttt aac aac cgc	tgg tat caa atg ggc atc	gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg	Trp Tyr Gln Met Gly Ile	Val Ser Trp Gly	
305	310	315	320
gaa ggc tgt gac cgg gat	ggg aaa tat ggc ttc tac	aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp	Gly Lys Tyr Gly Phe	Tyr Thr His Val Phe	
325	330	335	
cgc ctg aag aag tgg ata	cag aag gtc att gat	cag ttt gga gag tag	1056
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Gln Ala Arg Ser Leu Leu	Gln Arg Val Arg Arg	Thr Ala Thr Ser	Glu
35	40	45	
Tyr Gln Thr Phe Phe Asn	Pro Arg Thr Phe	Gly Ser Gly	Glu Ala Asp
50	55	60	
Cys Gly Leu Arg Pro Leu	Phe Glu Lys Ser	Leu Glu Asp	Lys Thr
65	70	75	80
Glu Arg Glu Leu Leu	Glu Ser Tyr Ile Asp	Gly Arg Ile	Val Glu Gly
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Ser Asp Ala Glu Ile	Gly Met Ser Pro Trp	Gln Val Met	Leu Phe Arg
100	105	110	
Lys Ser Pro Gln Glu	Leu Leu Cys Gly	Ala Ser Leu Ile	Ser Asp Arg
115	120	125	
Trp Val Leu Thr Ala	Ala His Cys Leu	Leu Tyr Pro	Pro Trp Asp Lys
130	135	140	
Asn Phe Thr Glu Asn Asp	Leu Leu Val Arg Ile	Gly Lys His	Ser Arg
145	150	155	160
Thr Arg Tyr Glu Arg Asn	Ile Glu Lys Ile	Ser Met Leu	Glu Lys Ile
165	170	175	
Tyr Ile His Pro Arg	Tyr Asn Trp Arg	Glu Asn Leu	Asp Arg Asp Ile

180	185	190
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288

Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85	90	95
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		
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aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		
115	120	125
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Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130	135	140
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
145	150	155
160		
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528	
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
165	170	175
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile		
180	185	190
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624	
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
240		
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768	
Thr Ala Asn Val Gly Lys Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816	
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864	
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
cga ggg gat gcc tgt gaa ggt gac act ggg gga ccc ttt gtc atg aag	912	
Arg Gly Asp Ala Cys Glu Gly Asp Thr Gly Gly Pro Phe Val Met Lys		
290	295	300
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960	
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
320		
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008	
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056	
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345

350

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35 40 45
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
50 55 60
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
65 70 75 80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
85 90 95
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
100 105 110
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
115 120 125
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
130 135 140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
145 150 155 160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
165 170 175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
180 185 190
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
195 200 205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
210 215 220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
225 230 235 240
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
245 250 255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
260 265 270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
275 280 285
Arg Gly Asp Ala Cys Glu Gly Asp Thr Gly Gly Pro Phe Val Met Lys
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Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
305 310 315 320
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe

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Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln		
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Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu		
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Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp		
50	55	60															
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Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr		
65	70	75	80														
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc	288	
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly		
85	90	95															
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Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg		
100	105	110															
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Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg		
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Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys		
130	135	140															
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Asn	Phe	Thr	Glu	Asn	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg			
145	150	155	160														
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Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile		
165	170	175															
tac	atc	cac	ccc	agg	tac	aac	tgg	cgg	gag	aac	ctg	gac	cgg	aac	att	576	

Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile
 180 185 190
 gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac 624
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
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 cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct 672
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 gga tac aag ggg cggtt gca ggc tgg ggc aac ctg aag gag acg tgg 720
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtc aac 768
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 ctg ccc att gtg gag cggtt gtc tgc aag gac tcc acc cggtt atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa gct gac gct ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys
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 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 325 330 335
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 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
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Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg
115							120					125			
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys
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Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile
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							180			185			190		
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							210			215			220		
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225							230				235			240	
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							245			250			255		
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35 40 45	
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50 55 60	
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65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc Glu Arg Glu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	288
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165 170 175	
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180 185 190	
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Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
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Arg Gly Asp Ala Cys Glu Gly Asp Val Gly Gly Pro Phe Val Met Lys			
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Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
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340	345	350	

<210> 16
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<212> PRT
<213> Homo sapiens

<400> 16			
Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala			
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20	25	30	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	

Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

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<213> Homo sapiens

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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
20 25 30
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
35 40 45
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
50 55 60
tgt ggg ctg cga cct ctg ttc gag aag tcg ctg gag gac aaa acc 240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
65 70 75 80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
85 90 95
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg 336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
100 105 110

aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg cgg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggt gac gat ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Asp Gly Gly Pro Phe Val Met Lys	
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu	
340 345 350	

<210> 18

<211> 351

<212> PRT

<213> Homo sapiens

<400> 18

Met	Ala	His	Val	Arg	Gly	Leu	Gln	Leu	Pro	Gly	Cys	Leu	Ala	Leu	Ala
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Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln
			20						25				30		
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu
			35					40			45				
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp
			50					55			60				
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr
			65				70			75			80		
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly
					85				90			95			
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg
					100				105			110			
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg
			115				120			125					
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys
			130				135			140					
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg
			145				150			155			160		
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile
					165			170			175				
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile
					180			185			190				
Ala	Leu	Met	Lys	Leu	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His	
					195			200			205				
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala
					210			215			220				
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp
					225			230			235			240	
Thr	Ala	Asn	Val	Gly	Lys	Gly	Gln	Pro	Ser	Val	Leu	Gln	Val	Val	Asn
					245			250			255				
Leu	Pro	Ile	Val	Glu	Arg	Pro	Val	Cys	Lys	Asp	Ser	Thr	Arg	Ile	Arg
					260			265			270				
Ile	Thr	Asp	Asn	Met	Phe	Cys	Ala	Gly	Tyr	Lys	Pro	Asp	Glu	Gly	Lys
					275			280			285				
Arg	Gly	Asp	Ala	Cys	Glu	Gly	Asp	Asp	Gly	Gly	Pro	Phe	Val	Met	Lys
					290			295			300				
Ser	Pro	Phe	Asn	Asn	Arg	Trp	Tyr	Gln	Met	Gly	Ile	Val	Ser	Trp	Gly
					305			310			315			320	
Glu	Gly	Cys	Asp	Arg	Asp	Gly	Lys	Tyr	Gly	Phe	Tyr	Thr	His	Val	Phe
					325			330			335				
Arg	Leu	Lys	Lys	Trp	Ile	Gln	Lys	Val	Ile	Asp	Gln	Phe	Gly	Glu	
					340			345			350				

<211> 1056
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<213> Homo sapiens

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<222> (1).. (1056)
<223>

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala		
1 5 10 15		
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96	
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln		
20 25 30		
caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu		
35 40 45		
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
50 55 60		
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
65 70 75 80		
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288	
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85 90 95		
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		
100 105 110		
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		
115 120 125		
tgg gtc ctc acc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	432	
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130 135 140		
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
145 150 155 160		
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528	
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
165 170 175		
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile		
180 185 190		
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624	
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195 200 205		

cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct		672	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cggtt gtt aca ggc tgg ggc aac ctg aag gag acg tgg		720	
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac		768	
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cggtt ccgtt gtc aag gac tcc acc cggtt atc cgctt		816	
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa		864	
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggt gac aat ggg gga ccc ttt gtc atg aag		912	
Arg Gly Asp Ala Cys Glu Gly Asp Asn Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cggtt tat caa atg ggc atc gtc tca tgg ggt		960	
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cggtt gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008	
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056	
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 20

<211> 351

<212> PRT

<213> Homo sapiens

<400> 20

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala

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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln

20 25 30

Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu

35 40 45

Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

50 55 60

Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr

65 70 75 80

Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly

85 90 95

Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg

100 105 110

Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg

115	120	125
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130	135	140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
145	150	155
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
165	170	175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile		
180	185	190
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Asn Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

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1 5 10 15	
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	

35	40	45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac			192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc			240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc			288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg			336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc			384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag			432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Asp Lys			
130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg aac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg cgg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggt gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	

agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt		960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

<210> 22

<211> 351

<212> PRT

<213> Homo sapiens

<400> 22

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala		
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln		
20	25	30
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu		
35	40	45
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
50	55	60
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
65	70	75
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85	90	95
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		
100	105	110
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		
115	120	125
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130	135	140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
145	150	155
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		
165	170	175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile		
180	185	190
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		

260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

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10	15
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20	25
30	35
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35	40
45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50	55
60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65	70
75	80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85	90
95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100	105
110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115	120
125	
tgg gtc ctc acc gcc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag	
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
432	

130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa gct gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
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340	345	350	

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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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1	5							10					15					
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag		96	
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln			
20						25					30							
caa	gca	cg	tcg	ctg	ctc	cag	cg	gg	gtc	cg	ca	cc	acc	g	agt	gag		144
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu			
35						40				45								
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac		192	
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp			
50						55				60								
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	tcg	ctg	gag	gac	aaa	acc			240	
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr			
65						70			75			80						
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc		288	
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly			
85						90					95							
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cg		336	
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg			
100						105				110								
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc		384	
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg			
115						120				125								
tgg	gtc	ctc	acc	gcc	ggc	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag			432	
Trp	Val	Leu	Thr	Ala	Ala	Ala	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys			
130						135			140									
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc		480	
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg			
145						150			155			160						
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc		528	
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile			
165						170				175								
tac	atc	cac	ccc	agg	tac	aac	tgg	cg	gag	aac	ctg	gac	cg	gac	att		576	
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile			
180						185			190									
gcc	ctg	atg	aag	ctg	aag	cct	gtt	ggc	ttc	agt	gac	tac	att	cac			624	
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His			
195						200				205								
cct	gtg	tgt	ctg	ccc	gac	agg	gag	acg	gca	ggc	agc	ttg	ctc	cag	gct		672	
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala			
210						215			220									
gga	tac	aag	ggg	cg	gtg	aca	ggc	tgg	ggc	aac	ctg	aag	gag	acg	tgg		720	
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp			

225	230	235	240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac				768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc				816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
260	265	270		
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa				864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				
275	280	285		
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag				912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys				
290	295	300		
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt				960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly				
305	310	315	320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc				1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
325	330	335		
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag				1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
340	345	350		

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<213> Homo sapiens

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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln			
20	25	30	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160

Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
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<213> Homo sapiens

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<221> CDS

<222> (1)..(1056)

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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	

caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	

tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	

tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
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Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc			288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg			336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc			384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag			432
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa gaa ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa gct gac ggg ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			

325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
Arg Gly Asp Ala Cys Glu Ala Asp Gly Gly Pro Phe Val Met Lys			
290	295	300	

Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 29
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<220>
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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctc ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc 288
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg 336
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc 384
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 tgg gtc ctc acc gcc cac tgc ctc ctg tac ccg ccc tgg gac aag 432
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc 480
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 aca agg tac gag cga aac att gaa gaa ata tcc atg ttg gaa aag atc 528

Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cg ^g gag aac ctg gac cg ^g aac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asn Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cg ^g gt ^g aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cg ^g cc ^g gtc tgc aag gac tcc acc cg ^g atc cg ^c			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa gct gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Ala Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cg ^c tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cg ^g gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
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20 25 30

Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu

35 40 45

Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

50	55	60													
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Ser	Leu	Glu	Asp	Lys	Thr	
65		70			75					80					
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly
		85			90					95					
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg
		100			105					110					
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg
		115			120					125					
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys
		130			135					140					
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg
	145		150			155					160				
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Glu	Ile	Ser	Met	Leu	Glu	Lys	Ile
		165			170					175					
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asn	Ile
		180			185					190					
Ala	Leu	Met	Lys	Leu	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His	
		195			200					205					
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Gln	Ala	
		210			215					220					
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp
	225		230			235					240				
Thr	Ala	Asn	Val	Gly	Lys	Gly	Gln	Pro	Ser	Val	Leu	Gln	Val	Val	Asn
		245			250					255					
Leu	Pro	Ile	Val	Glu	Arg	Pro	Val	Cys	Lys	Asp	Ser	Thr	Arg	Ile	Arg
		260			265					270					
Ile	Thr	Asp	Asn	Met	Phe	Cys	Ala	Gly	Tyr	Lys	Pro	Asp	Glu	Gly	Lys
		275			280					285					
Arg	Gly	Asp	Ala	Cys	Glu	Ala	Asp	Ala	Gly	Gly	Pro	Phe	Val	Met	Lys
		290			295					300					
Ser	Pro	Phe	Asn	Asn	Arg	Trp	Tyr	Gln	Met	Gly	Ile	Val	Ser	Trp	Gly
	305		310			315					320				
Glu	Gly	Cys	Asp	Arg	Asp	Gly	Lys	Tyr	Gly	Phe	Tyr	Thr	His	Val	Phe
		325			330					335					
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1			5				10				15						
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag		96
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln		
			20				25				30						
caa	gca	cgg	tcg	ctg	ctc	cag	cgg	gtc	cgg	cga	acc	gcc	acc	agt	gag		144
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu		
			35				40				45						
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac		192
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp		
			50			55				60							
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	aag	tcg	ctg	gag	gac	aaa	acc		240
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr		
			65			70				75			80				
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc		288
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly		
			85				90				95						
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cgg		336
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg		
			100				105				110						
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc		384
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg		
			115			120				125							
tgg	gtc	ctc	acc	gcc	cac	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag		432	
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys		
			130			135				140							
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc		480
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg		
			145			150				155			160				
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc		528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile		
			165				170				175						
tac	atc	cac	ccc	agg	tac	aac	tgg	cgg	gag	aac	ctg	gac	cgg	gac	att		576
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile		
			180			185				190							
gcc	ctg	atg	aag	ctg	aag	aag	cct	gtt	gcc	ttc	agt	gac	tac	att	cac		624
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His		
			195			200				205							
cct	gtg	tgt	ctg	ccc	gac	agg	gag	acg	gca	gcc	agc	ttg	ctc	cag	gct		672
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Lys	Ala			
			210			215				220							
gga	tac	aag	ggg	cgg	gtg	aca	ggc	tgg	ggc	aac	ctg	aag	gag	acg	tgg		720
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp		
			225			230				235			240				
aca	gcc	aac	gtt	ggt	aag	ggg	cag	ccc	agt	gtc	ctg	cag	gtg	gtg	aac		768
Thr	Ala	Asn	Val	Gly	Lys	Gly	Gln	Pro	Ser	Val	Leu	Gln	Val	Val	Asn		
			245				250				255						
ctg	ccc	att	gtg	gag	cgg	ccg	gtc	tgc	aag	gac	tcc	acc	cgg	atc	cgc		816

Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
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 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa gct gac agt ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Ala Asp Ser Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
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 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His

195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Ala Asp Ser Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
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Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln	
20 25 30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu	
35 40 45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp	
50 55 60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr	
65 70 75 80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	

tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg		336	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc		384	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag		432	
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
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Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
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aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc		528	
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att		576	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac		624	
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctg cag gct		672	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg		720	
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
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aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac		768	
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc		816	
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa		864	
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggg gac ggg ggg gga ccc ttt gtc atg aag		912	
Arg Gly Asp Ala Cys Glu Gly Asp Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt		960	
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008	
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
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cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056	
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

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 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
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 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
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 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
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 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
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 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
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 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln				
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caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag				144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu				
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tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac				192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp				
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Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr				
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gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc				288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly				
85 90 95				
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg				336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg				
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Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg				
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tgg gtc ctc acc gcc tcc tgc ctc ctg tac ccg ccc tgg gac aag				432
Trp Val Leu Thr Ala Ala Ser Cys Leu Leu Tyr Pro Pro Trp Asp Lys				
130 135 140				
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc				480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg				
145 150 155 160				
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc				528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile				
165 170 175				
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att				576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile				
180 185 190				

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Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
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cct gtg tgt ctg ccc gac agg gag acg gca gac ttg ctc cag gct		672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
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Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
240		
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac		768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc		816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa		864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag		912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt		960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
320		
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu.		
340	345	350

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala

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Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

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Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr

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Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly

85 90 95

Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
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 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ser Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
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 225 230 235 240
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 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
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 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
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 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

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 <213> Homo sapiens

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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln

20	25	30	
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag			144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac			192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc			240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc			288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg			336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc			384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag			432
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Asp Lys			
130	135	140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa gag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg cgg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	

cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag		912	
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
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agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt		960	
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008	
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056	
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 38

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<212> PRT

<213> Homo sapiens

<400> 38

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala			
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln			
20	25	30	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
Thr Arg Tyr Glu Arg Asn Ile Glu Glu Ile Ser Met Leu Glu Lys Ile			
165	170	175	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240

Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 39
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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag		96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln		
20 25 30		
caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag		144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu		
35 40 45		
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac		192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
50 55 60		
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc		240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
65 70 75 80		
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc		288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85 90 95		
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg		336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		
100 105 110		
aag agt ccc gag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc		384
Lys Ser Pro Glu Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		

115	120	125	
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag			432
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
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aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc			480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc			528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att			576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct			672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala			
210	215	220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cgg ccc gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

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<211> 351

<212> PRT

<213> Homo sapiens

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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
35 40 45
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
50 55 60
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
65 70 75 80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
85 90 95
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
100 105 110
Lys Ser Pro Glu Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
115 120 125
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
130 135 140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
145 150 155 160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
165 170 175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
180 185 190
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
195 200 205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
210 215 220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
225 230 235 240
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
245 250 255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
260 265 270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
275 280 285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
290 295 300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
305 310 315 320
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
325 330 335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
340 345 350

<210> 41

<211> 1056

<212> DNA

<213> Homo sapiens

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<223>

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gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag		96	
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln			
20																30		
caa	gca	cg	tcg	ctc	cag	cg	gtc	cg	cg	acc	gcc	acc	agt	gag			144	
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu			
35																45		
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac		192	
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp			
50																60		
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	tcg	ctg	gag	gac	aaa	acc			240	
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr			
65																80		
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc		288	
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly			
85																95		
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cg		336	
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg			
100																110		
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc		384	
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg			
115																125		
tgg	gtc	ctc	acc	gcc	cac	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag			432	
Trp	Val	Leu	Thr	Ala	Ala	His	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys			
130																140		
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc		480	
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Ile	Gly	Lys	His	Ser	Arg				
145																155	160	
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc		528	
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Ile				
165																175		
tac	atc	cac	ccc	agg	tac	aac	tgg	cg	gag	aac	ctg	gac	cg	gcc	att		576	
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Ala	Ile			
180																185	190	
gcc	ctg	atg	aag	aag	cct	gtt	gcc	ttc	agt	gac	tac	att	cac				624	
Ala	Leu	Met	Lys	Leu	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His				
195																200	205	
cct	gtg	tgt	ctg	ccc	gac	agg	gag	acg	gca	gcc	agc	ttg	ctc	cag	gct		672	
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala			

210	215	220	
gga tac aag ggg cggtg aca ggc tgg ggc aac ctg aag gag acg tgg			720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp			
225	230	235	240
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cggtcg gtc tgc aag gac tcc acc cgg atc cgc			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggt gac gct ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala His Cys Leu Leu Tyr Pro Pro Trp Asp Lys			

130	135	140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg		
145	150	155
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile		160
165	170	175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Ala Ile		
180	185	190
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
240		
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
320		
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325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
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<213> *Homo sapiens*

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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag      96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
20          25          30
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag      144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
35          40          45
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac      192

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 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80 288
 gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95 336
 tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110 384
 aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125 432
 tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140 480
 aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160 528
 aca agg tac gag cga aac att gaa gcc ata tcc atg ttg gaa aag atc
 Thr Arg Tyr Glu Arg Asn Ile Glu Ala Ile Ser Met Leu Glu Lys Ile
 165 170 175 576
 tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190 624
 gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205 672
 cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220 720
 gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240 768
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255 816
 ctg ccc att gtg gag cgg cgg gtc tgc aag gac tcc acc cgg atc cgc
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270 864
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285 912
 cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300 960
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly

305	310	315	320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc				1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
325	330	335		
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag				1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
340	345	350		

<210> 44
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<212> PRT
<213> Homo sapiens

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala				
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln				
20	25	30		
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu				
35	40	45		
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp				
50	55	60		
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr				
65	70	75	80	
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly				
85	90	95		
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg				
100	105	110		
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg				
115	120	125		
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys				
130	135	140		
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg				
145	150	155	160	
Thr Arg Tyr Glu Arg Asn Ile Glu Ala Ile Ser Met Leu Glu Lys Ile				
165	170	175		
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile				
180	185	190		
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His				
195	200	205		
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala				
210	215	220		
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp				
225	230	235	240	
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
260	265	270		
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				

275	280	285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

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<213> Homo sapiens

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<221> CDS
<222> (1)..(1056)
<223>

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala		
1	5	10
		15
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96	
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln		
20	25	30
caa gca cgg tcg ctg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu		
35	40	45
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
50	55	60
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc	240	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
65	70	75
		80
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288	
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85	90	95
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg		
100	105	110
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg		
115	120	125
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432	
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys		
130	135	140
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc gcc cac tcc cgc	480	

Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
 145 150 155 160
 aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc 528
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att 576
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac 624
 Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct 672
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg 720
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac 768
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc 816
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa 864
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag 912
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt 960
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc 1008
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag 1056
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 46

<211> 351

<212> PRT

<213> Homo sapiens

<400> 46

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala

1 5 10 15

Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln

20 25 30

Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

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<213> *Homo sapiens*

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<222> (1)..(1056)

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<400> 47

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Met	Ala	His	Val	Arg	Gly	Leu	Gln	Leu	Pro	Gly	Cys	Leu	Ala	Leu	Ala		
1	5							10				15					
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag		96
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln		
20								25				30					
caa	gca	cg	tcg	ctc	cag	cg	gtc	cg	cg	acc	gcc	acc	agt	gag		144	
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu		
35								40				45					
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac		192
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp		
50								55				60					
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	aag	tcg	ctg	gag	gac	aaa	acc		240
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr		
65								70			75		80				
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc		288
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly		
85								90				95					
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cg		336
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg		
100								105			110						
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc		384
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg		
115								120			125						
tgg	gtc	ctc	acc	gcc	gcc	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag		432	
Trp	Val	Leu	Thr	Ala	Ala	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys			
130								135			140						
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	aag	cac	tcc	cgc		480
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Lys	His	Ser	Arg		
145								150			155		160				
aca	agg	tac	gag	cga	aac	att	gaa	aag	ata	tcc	atg	ttg	gaa	aag	atc		528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Lys	Ile	Ser	Met	Leu	Glu	Lys	Ile		
165								170			175						
tac	atc	cac	ccc	agg	tac	aac	tgg	cg	gag	aa	ctg	gac	cg	att		576	
Tyr	Ile	His	Pro	Arg	Tyr	Asn	Trp	Arg	Glu	Asn	Leu	Asp	Arg	Asp	Ile		
180								185			190						
gcc	ctg	atg	aag	ctg	aag	aag	cct	gtt	ggc	ttc	agt	gac	tac	att	cac		624
Ala	Leu	Met	Lys	Leu	Lys	Lys	Pro	Val	Ala	Phe	Ser	Asp	Tyr	Ile	His		
195								200			205						
cct	gt	tgt	ctg	ccc	gac	agg	gg	ac	gca	gg	ac	tt	ctc	cag	gct		672
Pro	Val	Cys	Leu	Pro	Asp	Arg	Glu	Thr	Ala	Ala	Ser	Leu	Leu	Gln	Ala		
210								215			220						
gga	tac	aag	ggg	cg	gt	aca	gg	tt	gg	aa	ct	aa	gg	ac	tg		720
Gly	Tyr	Lys	Gly	Arg	Val	Thr	Gly	Trp	Gly	Asn	Leu	Lys	Glu	Thr	Trp		
225								230			235		240				
aca	gcc	aac	gtt	ggt	aag	ggg	cag	ccc	agt	gtc	ctg	cag	gt	gt	aac		768

Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn			
245	250	255	
ctg ccc att gtg gag cg ^g ccg gtc tgc aag gac tcc acc cg ^g atc cg ^c			816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg			
260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
gcc ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912
Ala Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cg ^g gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 48
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<212> PRT
<213> Homo sapiens

<400> 48			
Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala			
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln			
20	25	30	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145	150	155	160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	

Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Ala Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

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 <213> Homo sapiens

<220>
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 gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag 96
 Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
 20 25 30
 caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag 144
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 tac cag act ttc ttc aat ccg agg acc ttt ggc tgc gga gag gca gac 192
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc 240
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80

gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly	
85 90 95	
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg	336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	
115 120 125	
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg	
145 150 155 160	
aca agg tac gag cga aac att gaa tcc ata tcc atg ttg gaa aag atc	528
Thr Arg Tyr Glu Arg Asn Ile Glu Ser Ile Ser Met Leu Glu Lys Ile	
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	
180 185 190	
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac	624
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct	672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg	720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac	768
Thr Ala Asn Val Gly Lys Gln Pro Ser Val Leu Gln Val Val Asn	
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc	816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa	864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	
275 280 285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag	912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys	
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt	960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc	1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	
325 330 335	
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag	1056

Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 50
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 <213> Homo sapiens

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 Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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 20 25 30
 Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
 35 40 45
 Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
 50 55 60
 Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Ser Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320

<210> 51
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<213> *Homo sapiens*

<220>
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Met	Ala	His	Val	Arg	Gly	Leu	Gln	Leu	Pro	Gly	Cys	Leu	Ala	Leu	Ala	
1	5							10						15		
gcc	ctg	tgt	agc	ctt	gtg	cac	agc	cag	cat	gtg	ttc	ctg	gct	cct	cag	96
Ala	Leu	Cys	Ser	Leu	Val	His	Ser	Gln	His	Val	Phe	Leu	Ala	Pro	Gln	
	20							25						30		
caa	gca	cgg	tcg	ctg	ctc	cag	cgg	gtc	cgg	cga	acc	gcc	acc	agt	gag	144
Gln	Ala	Arg	Ser	Leu	Leu	Gln	Arg	Val	Arg	Arg	Thr	Ala	Thr	Ser	Glu	
	35							40						45		
tac	cag	act	ttc	ttc	aat	ccg	agg	acc	ttt	ggc	tcg	gga	gag	gca	gac	192
Tyr	Gln	Thr	Phe	Phe	Asn	Pro	Arg	Thr	Phe	Gly	Ser	Gly	Glu	Ala	Asp	
	50							55						60		
tgt	ggg	ctg	cga	cct	ctg	ttc	gag	aag	aag	tcg	ctg	gag	gac	aaa	acc	240
Cys	Gly	Leu	Arg	Pro	Leu	Phe	Glu	Lys	Lys	Ser	Leu	Glu	Asp	Lys	Thr	
	65							70						75		80
gaa	aga	gag	ctc	ctg	gaa	tcc	tac	atc	gac	ggg	cgc	att	gtg	gag	ggc	288
Glu	Arg	Glu	Leu	Leu	Glu	Ser	Tyr	Ile	Asp	Gly	Arg	Ile	Val	Glu	Gly	
	85							90						95		
tcg	gat	gca	gag	atc	ggc	atg	tca	cct	tgg	cag	gtg	atg	ctt	ttc	cgg	336
Ser	Asp	Ala	Glu	Ile	Gly	Met	Ser	Pro	Trp	Gln	Val	Met	Leu	Phe	Arg	
	100							105						110		
aag	agt	ccc	cag	gag	ctg	ctg	tgt	ggg	gcc	agc	ctc	atc	agt	gac	cgc	384
Lys	Ser	Pro	Gln	Glu	Leu	Leu	Cys	Gly	Ala	Ser	Leu	Ile	Ser	Asp	Arg	
	115							120						125		
tgg	gtc	ctc	acc	gcc	gcc	tgc	ctc	ctg	tac	ccg	ccc	tgg	gac	aag		432
Trp	Val	Leu	Thr	Ala	Ala	Cys	Leu	Leu	Tyr	Pro	Pro	Trp	Asp	Lys		
	130							135						140		
aac	ttc	acc	gag	aat	gac	ctt	ctg	gtg	cgc	att	ggc	gcc	cac	tcc	cgc	480
Asn	Phe	Thr	Glu	Asn	Asp	Leu	Leu	Val	Arg	Ile	Gly	Ala	His	Ser	Arg	
	145							150						155		160
aca	agg	tac	gag	cga	aac	att	gaa	gcc	ata	tcc	atg	ttg	gaa	aag	atc	528
Thr	Arg	Tyr	Glu	Arg	Asn	Ile	Glu	Ala	Ile	Ser	Met	Leu	Glu	Lys	Ile	

165	170	175		
tac atc cac ccc agg tac aac tgg cg ^g gag aac ctg gac cg ^g gac att			576	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile				
180	185	190		
gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac			624	
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His				
195	200	205		
cct gtg tgt ctg ccc gac agg gag acg gca g ^c agc ttg ctc cag gct			672	
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala				
210	215	220		
gga tac aag ggg cg ^g gtg aca ggc tgg ggc aac ctg aag gag acg tgg			720	
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp				
225	230	235	240	
aca gcc aac gtt aag ggg cag ccc agt gtc ctg cag gtg gtg aac			768	
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
ctg ccc att gtg gag cg ^g ccg gtc tgc aag gac tcc acc cg ^g atc cg ^c			816	
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				
260	265	270		
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864	
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys				
275	280	285		
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912	
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys				
290	295	300		
agc ccc ttt aac aac cg ^c tgg tat caa atg ggc atc gtc tca tgg ggt			960	
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly				
305	310	315	320	
gaa ggc tgt gac cg ^g gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008	
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe				
325	330	335		
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056	
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu				
340	345	350		

<210> 52

<211> 351

<212> PRT

<213> Homo sapiens

<400> 52

Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala

1 5 10 15

Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln

20 25 30

Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu

35 40 45

Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp

50 55 60

Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
 65 70 75 80
 Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
 85 90 95
 Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
 100 105 110
 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Ala Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 53
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 <213> Homo sapiens

<220>
 <221> CDS
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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala				
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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag				96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln				
20	25	30		
caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag				144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu				
35	40	45		
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac				192
Tyr Gln Thr Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp				
50	55	60		
tgt ggg ctg cga cct ctg ttc gag aag aag tcg ctg gag gac aaa acc				240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr				
65	70	75	80	
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc				288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly				
85	90	95		
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg				336
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg				
100	105	110		
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc				384
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg				
115	120	125		
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag				432
Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys				
130	135	140		
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc gcc cac tcc cgc				480
Asn Phe Thr Glu Asn Asp Leu Val Arg Ile Gly Ala His Ser Arg				
145	150	155	160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc				528
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile				
165	170	175		
180	185	190		
195	200	205		
210	215	220		
225	230	235	240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac				768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn				
245	250	255		
ctg ccc att gtg gag cgg ccg gtc aag gac tcc acc egg atc cgc				816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg				

260	265	270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa			864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys			
275	280	285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag			912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys			
290	295	300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt			960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly			
305	310	315	320
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc			1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe			
325	330	335	
gcc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag			1056
Ala Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu			
340	345	350	

<210> 54
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 <212> PRT
 <213> Homo sapiens

<400> 54			
Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala			
1	5	10	15
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln			
20	25	30	
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35	40	45	
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50	55	60	
Cys Gly Leu Arg Pro Leu Phe Glu Lys Ser Leu Glu Asp Lys Thr			
65	70	75	80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85	90	95	
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg			
100	105	110	
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115	120	125	
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130	135	140	
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg			
145	150	155	160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165	170	175	
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180	185	190	
Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His			
195	200	205	

Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Ala Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350

<210> 55
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 <212> DNA
 <213> Homo sapiens

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Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala		
1 5 10 15		
gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag		96
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln		
20 25 30		
caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag		144
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu		
35 40 45		
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac		192
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp		
50 55 60		
tgt ggg ctg cga cct ctg ttc gag aag aag tcg gag gac aaa acc		240
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr		
65 70 75 80		
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc		288
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly		
85 90 95		

tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt ttc cgg Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg	336
100 105 110	
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg	384
115 120 125	
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag Trp Val Leu Thr Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys	432
130 135 140	
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc gcc cac tcc cgc Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg	480
145 150 155 160	
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile	528
165 170 175	
tac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile	576
180 185 190	
gcc ctg atg aag aag cct gtt gcc ttc agt gac tac att cac Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His	624
195 200 205	
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala	672
210 215 220	
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp	720
225 230 235 240	
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn	768
245 250 255	
ctg ccc att gtg gag cgg ccg gtc tgc aag gac tcc acc cgg atc cgc Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg	816
260 265 270	
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys	864
275 280 285	
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys	912
290 295 300	
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly	960
305 310 315 320	
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe	1008
325 330 335	
cgc ctg aag gcc tgg ata cag aag gtc att gat cag ttt gga gag tag Arg Leu Lys Ala Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu	1056
340 345 350	

<210> 56
<211> 351
<212> PRT
<213> Homo sapiens

<400> 56
Met Ala His Val Arg Gly Leu Gln Leu Pro Gly Cys Leu Ala Leu Ala
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Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln
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Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu
35 40 45
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp
50 55 60
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr
65 70 75 80
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly
85 90 95
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Phe Arg
100 105 110
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
115 120 125
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
130 135 140
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Ala His Ser Arg
145 150 155 160
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
165 170 175
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
180 185 190
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His
195 200 205
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
210 215 220
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
225 230 235 240
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
245 250 255
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
260 265 270
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
275 280 285
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
290 295 300
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
305 310 315 320
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
325 330 335
Arg Leu Lys Ala Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu

340

345

350

<210> 57
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<212> DNA
<213> Homo sapiens

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<222> (1)..(1056)
<223>

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gcc ctg tgt agc ctt gtg cac agc cag cat gtg ttc ctg gct cct cag	96		
Ala Leu Cys Ser Leu Val His Ser Gln His Val Phe Leu Ala Pro Gln			
20 25 30			
caa gca cgg tcg ctc cag cgg gtc cgg cga acc gcc acc agt gag	144		
Gln Ala Arg Ser Leu Leu Gln Arg Val Arg Arg Thr Ala Thr Ser Glu			
35 40 45			
tac cag act ttc ttc aat ccg agg acc ttt ggc tcg gga gag gca gac	192		
Tyr Gln Thr Phe Phe Asn Pro Arg Thr Phe Gly Ser Gly Glu Ala Asp			
50 55 60			
tgt ggg ctg cga cct ctg ttc gag aag tcg ctg gag gac aaa acc	240		
Cys Gly Leu Arg Pro Leu Phe Glu Lys Lys Ser Leu Glu Asp Lys Thr			
65 70 75 80			
gaa aga gag ctc ctg gaa tcc tac atc gac ggg cgc att gtg gag ggc	288		
Glu Arg Glu Leu Leu Glu Ser Tyr Ile Asp Gly Arg Ile Val Glu Gly			
85 90 95			
tcg gat gca gag atc ggc atg tca cct tgg cag gtg atg ctt gcc cgg	336		
Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Ala Arg			
100 105 110			
aag agt ccc cag gag ctg ctg tgt ggg gcc agc ctc atc agt gac cgc	384		
Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg			
115 120 125			
tgg gtc ctc acc gcc gcc tgc ctc ctg tac ccg ccc tgg gac aag	432		
Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys			
130 135 140			
aac ttc acc gag aat gac ctt ctg gtg cgc att ggc aag cac tcc cgc	480		
Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg			
145 150 155 160			
aca agg tac gag cga aac att gaa aag ata tcc atg ttg gaa aag atc	528		
Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile			
165 170 175			
lac atc cac ccc agg tac aac tgg cgg gag aac ctg gac cgg gac att	576		
Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile			
180 185 190			

gcc ctg atg aag ctg aag aag cct gtt gcc ttc agt gac tac att cac		624
Ala Leu Met Lys Leu Lys Pro Val Ala Phe Ser Asp Tyr Ile His		
195	200	205
cct gtg tgt ctg ccc gac agg gag acg gca gcc agc ttg ctc cag gct		672
Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala		
210	215	220
gga tac aag ggg cgg gtg aca ggc tgg ggc aac ctg aag gag acg tgg		720
Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp		
225	230	235
aca gcc aac gtt ggt aag ggg cag ccc agt gtc ctg cag gtg gtg aac		768
Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn		
245	250	255
ctg ccc att gtg gag cgg cgg gtc tgc aag gac tcc acc cgg atc cgc		816
Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg		
260	265	270
atc act gac aac atg ttc tgt gct ggt tac aag cct gat gaa ggg aaa		864
Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys		
275	280	285
cga ggg gat gcc tgt gaa ggg gac gcc ggg gga ccc ttt gtc atg aag		912
Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys		
290	295	300
agc ccc ttt aac aac cgc tgg tat caa atg ggc atc gtc tca tgg ggt		960
Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly		
305	310	315
gaa ggc tgt gac cgg gat ggg aaa tat ggc ttc tac aca cat gtg ttc		1008
Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe		
325	330	335
cgc ctg aag aag tgg ata cag aag gtc att gat cag ttt gga gag tag		1056
Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu		
340	345	350

<210> 58
<211> 351
<212> PRT
<213> *Homo sapiens*

Ser Asp Ala Glu Ile Gly Met Ser Pro Trp Gln Val Met Leu Ala Arg
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 Lys Ser Pro Gln Glu Leu Leu Cys Gly Ala Ser Leu Ile Ser Asp Arg
 115 120 125
 Trp Val Leu Thr Ala Ala Ala Cys Leu Leu Tyr Pro Pro Trp Asp Lys
 130 135 140
 Asn Phe Thr Glu Asn Asp Leu Leu Val Arg Ile Gly Lys His Ser Arg
 145 150 155 160
 Thr Arg Tyr Glu Arg Asn Ile Glu Lys Ile Ser Met Leu Glu Lys Ile
 165 170 175
 Tyr Ile His Pro Arg Tyr Asn Trp Arg Glu Asn Leu Asp Arg Asp Ile
 180 185 190
 Ala Leu Met Lys Leu Lys Lys Pro Val Ala Phe Ser Asp Tyr Ile His
 195 200 205
 Pro Val Cys Leu Pro Asp Arg Glu Thr Ala Ala Ser Leu Leu Gln Ala
 210 215 220
 Gly Tyr Lys Gly Arg Val Thr Gly Trp Gly Asn Leu Lys Glu Thr Trp
 225 230 235 240
 Thr Ala Asn Val Gly Lys Gly Gln Pro Ser Val Leu Gln Val Val Asn
 245 250 255
 Leu Pro Ile Val Glu Arg Pro Val Cys Lys Asp Ser Thr Arg Ile Arg
 260 265 270
 Ile Thr Asp Asn Met Phe Cys Ala Gly Tyr Lys Pro Asp Glu Gly Lys
 275 280 285
 Arg Gly Asp Ala Cys Glu Gly Asp Ala Gly Gly Pro Phe Val Met Lys
 290 295 300
 Ser Pro Phe Asn Asn Arg Trp Tyr Gln Met Gly Ile Val Ser Trp Gly
 305 310 315 320
 Glu Gly Cys Asp Arg Asp Gly Lys Tyr Gly Phe Tyr Thr His Val Phe
 325 330 335
 Arg Leu Lys Lys Trp Ile Gln Lys Val Ile Asp Gln Phe Gly Glu
 340 345 350